



# **Deterrence Primer**

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*MNE 7 Outcome 2 Objective 2: Deterrence Primer v1.0*

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## Summary

This document is intended to be used as part of the Multinational Experiment 7. It is a foundational document, which identifies and integrates key deterrence knowledge in one place. This knowledge is an interpretation that satisfies the specific needs and limited scope of Multinational Experiment 7 and consequently it should not be considered to be an authoritative work.

## Background

The Multinational Experiment 7 (MNE 7) is a two-year “Access to the Global Commons” project to develop improved collaborative capabilities to ensure access to and use of the maritime, air, space and cyber domains. This is expected to support military access strategies while supporting civil agency concerns on commerce and the management and protection of resources.

Space provides critical and unique capabilities that increase the effectiveness of terrestrial war-fighters, via accurate timing and navigational data, command and control capabilities, imagery and weather information. Our dependency on Space makes this domain an attractive target to our adversaries to negate our supremacy in other domains, and since Space is not owned by anyone it can be exploited by everyone. Furthermore, the capability to enter space or to restrict or deny access to it is no longer limited to global powers.

Multinational Experiment 7 Outcome 2 is segmented into three Objectives. The first Objective determines key dependencies on space and space-enabled capabilities and identifies threats and vulnerabilities to these dependencies. The second Objective identifies mechanisms to influence actors who may threaten our access or use of space. The third Objective develops proposals for mitigation of effects of the denial or disruption of the space domain in the event that influencing actors fails. The aims and scope of the Multinational Experiment 7 Outcome 2 were informed by the Multinational Experiment 7 Space Domain Baseline Assessment Report and the Objective Development Conference.<sup>1</sup>

This document is a formal deliverable from work conducted under Multinational Experiment 7 Outcome 2. It provides foundational knowledge and a point of reference on ideas and concepts related to deterrence, although by strict definition the document will cover coercion, which is both deterrence and compellence. The document will be essential reading for those who wish to understand the context in which Outcome 2 outputs and recommendations are made.

The knowledge collated in this document has been interpreted so that it satisfies the specific needs and limited scope of Multinational Experiment 7. It draws on open-source material only, irrespective of whether other restricted information is confirmatory or contradictory, and it makes a number of simplifications, consequently it should not be considered an authoritative work.

## Deterrence Historiography

The use of deterrence can be identified throughout human history; however, the evolution of modern deterrence thinking can be broadly grouped into four successive waves of thought. The initial wave of deterrence theorizing came after World War II and stemmed from the advent of nuclear weapons and

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<sup>1</sup> Multinational Experiment 7 Space Domain Baseline Assessment Report, UNCLASSIFIED, 1 April 2011; Space Domain Feedback to Multinational Experiment 7 Plenary Objective Development Conference, 8 April 2011.

the consideration of their potential implications (Brodie; Wolfers). The work of the second wave of theorists in the late 1950s and 60s signified the pinnacle of “rational” deterrence thinking (Schelling; Snyder and Diesing). Some third wave thinkers sought to further refine deterrence thinking (Huth and Russett; Lebow and Stein), whilst others, driven by breakthroughs in areas such as behavioural and organisational theory in the 1970s and 80s, sought to challenge the fundamental assumptions of “rationality” in previous deterrence thinking (George and Smoke; Jervis). Nevertheless, within the literature there is a distinct focus on “extended” deterrence as the cold-war typically cast third-party states as pawns over which the two superpowers squabbled, and consequently the majority of “applied” deterrence theory concerns one superpower’s efforts to limit expansion of the other. Therefore, most work on deterrence theory in this period is limited to “extended immediate rational deterrence”. The recent fourth wave reflects a change from a focus on relatively symmetrical situations of mutual deterrence to a greater concern with what have come to be called asymmetric threats. The most important result has been to reveal the value of adopting concept of deterrence that is not exclusively military in nature<sup>2</sup> (Knopf; Gray; Lantis). It should be noted that an identified divergence between the qualitative analyses and the formal theories exists; “largely because formal theories of general deterrence have never been subjected to direct empirical testing.”<sup>3</sup>

Drawing on Singer’s works on differentiating persuasion from dissuasion, the term “compellence” is attributed to Schelling. However, the concept was left largely unexplored until towards the end of the Cold War where several international events provided inductive catalysts for further exploration of the concept.<sup>4</sup> Amongst others, key thinkers in this domain include George and Simons; Freedman; Lauren; and Art and Cronin.

## Deterrence Typology

Theoretical disagreement over the terminology of coercion is significant. George considers compellence to extend beyond coercion, whilst Lauren and Trevorton exclude deterrence entirely from the coercive spectrum. Nevertheless, a wide range of theorists agree that compellence and deterrence are a subset of coercion (Art and Cronin; Byman and Waxman, George, Hall, and Simons; Herring; Huth and Russett; Stein; Freedman; and Schelling;). Schelling’s categorisation, as depicted in diagram below<sup>5</sup>, provides a logically appealing framework of the relationships between coercion, compellence, deterrence and other key components of a security policy.<sup>6</sup>

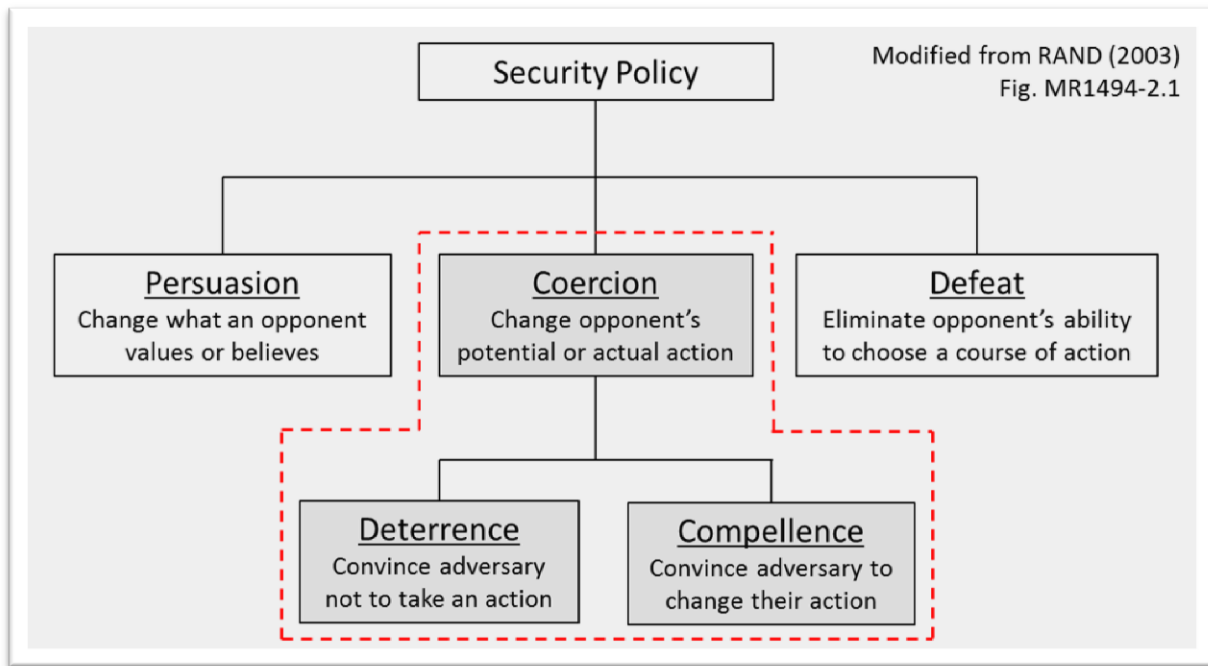
<sup>2</sup> Knopf, Jeffrey (2010); “The Fourth Wave in Deterrence Research” (Contemporary Security Policy) 31 (1)

<sup>3</sup> Quackenbush, Stephen (2010); “General Deterrence and International Conflict: Testing Perfect Deterrence Theory” (International Interactions) 36

<sup>4</sup> Sperandei, Maria (2006); “Bridging Deterrence and Compellence: An Alternative Approach to the Study of Coercive Diplomacy”, (International Studies Review) 8; Schaub, Gary Jr. (1998); “Compellence: Resuscitating the Concept” in Freedman, Lawrence “Strategic Coercion: Concepts and Cases” (Oxford University Press)

<sup>5</sup> Diagram modified from Johnson, David E. Mueller, Karl P. & Taft, William H (2003) “Conventional Coercion Across the Spectrum of Operations: The Utility of US Military Forces in the Emerging Security Environment” (RAND)

<sup>6</sup> Sperandei (2006); Byman, Daniel A & Matthew C. Waxman (2000) “Kosovo and the Great Air Power Debate” (International Security) 24, (4)



## Major terms

**Coercion:** The use of threats and incentives to effect a change in an adversary's potential or actual course of action. Coercion is achieved through dissuading an opponent from acting (Deterrence), persuading an opponent to change their actions (Compellence), or a through a combination of the two. Both strategies require convincing the adversary that the coercer has "the will and the capability to inflict considerable damage upon something that the opponent values more than the object of dispute."<sup>7</sup> Coercive strategies rely on the latent use or limited use of force,<sup>8</sup> but differ from strategies of defeat; which seek to eliminate an adversary's ability to choose a course of action; equally, they differ from strategies of persuasion, which seek to influence a target by changing their fundamental values or beliefs.

**Deterrence:** Deterrence aims to convince an opponent not to take a contemplated action,<sup>9</sup> by making the expected results of the action appear worse than the expected consequences of not acting.<sup>10</sup> Punishment is the primary strategy associated with deterrence: threatening to impose high costs on an adversary if it attacks.<sup>11</sup> However, "successful deterrence does not necessarily have to depend on the threat and capacity to impose punishment; it may also be achieved via denying the opponent any gains from the action that is to be deterred."<sup>12</sup> And so deterrence-thinking seeks to affect either the benefit or the cost of the course of action contemplated by an opponent. However, logically,

<sup>7</sup> Lauren, Paul (1979); "Diplomacy: New Approaches in History, Theory and Policy" (Free Press); Sperandei, Maria (2006)

<sup>8</sup> Byman, Daniel A & Matthew C. Waxman (2000)

<sup>9</sup> Schelling, Thomas C. (1981) "The Strategy of Conflict" 2<sup>nd</sup> Ed. (Harvard University Press)

Alexander L. George & Richard Smoke (1974). "Deterrence in American Foreign Policy: Theory and Practice." (Columbia University Press)

<sup>11</sup> Johnson, David E. Mueller, Karl P. & Taft, William H (2003)

<sup>12</sup> Sperandei, Maria (2006)

deterrence can also be achieved through the use of inducements, by increasing the opponent's perceived value of the *status quo* thereby incentivising the opponent not to attack.<sup>13</sup>

**Compellence:** Compellence aims to persuade an opponent to change his behaviour by making the value of resistance worse than value of compliance.<sup>14</sup> This differs from deterrence in that it aims to persuade a change in an opponent's activity in accordance with demands, as opposed to dissuading an opponent from acting in the first place.<sup>15</sup> That is "to stop an adversary from doing something it was already doing or to compel it to do something it would not otherwise have done."<sup>16</sup> Whilst the coercive strategies of deterrence and compellence rely largely on a threat of force to influence adversarial decision makers, use of force in some limited capacity and a time limit for a response may be required for compellence to work.<sup>17</sup>

**Compellence and deterrence:** The relationship between deterrence and compellence remains under dispute amongst theorists, with differing emphases placed upon each. Whilst they can be defined as distinct analytical concepts, the difference between deterrence and compellence can be ambiguous and blurred in reality.<sup>18</sup> For example, "a demand that an invader not proceed beyond a particular geographic threshold can be interpreted with equal plausibility either as compelling the enemy to halt his advance or as deterring him from advancing further".<sup>19</sup> However, cases indicate that the two strategies are often practiced sequentially or in tandem and in ways that effectively blur the distinctions between them; "deterrence may be used to reinforce compellence, and compellence to deter."<sup>20</sup>

In spite of some ambiguities, and whilst the two coercive policies share similarities, there are important distinctions that generate different conclusions and requirements for their successful implementation. Therefore, for the benefit of this report, it is beneficial to consider deterrence and compellence as sharing commonalities as subsets of coercion, yet in their application possessing some different and distinct components from one another.

## Modifying adjectives

**Basic/Direct:** refers to threats and incentives that are designed to prevent attacks on the defender's home territory.<sup>21</sup>

**Extended:** refers to threats and incentives designed to prevent attacks on a third party, usually referred to as a protégé.<sup>22</sup> As a fundamental coercive policy concern during the Cold War and

<sup>13</sup> Johnson, David E. Mueller, Karl P. & Taft, William H (2003); George, Alexander L. & Smoke, Richard (1989); "Deterrence and Foreign Policy" (World Politics) 41 (2); Danlovic, Vesna (2002); "When the Stakes are High: Deterrence and Conflict Among Major Powers" (University of Michigan); Jervis, Robert (1982); "Deterrence and Perception" (International Security) 7, (3)

<sup>14</sup> Slantchev, Branislav L. (2005); "Deterrence and Compellence" (University of California)

<sup>15</sup> pp.5-6 Trevorton 2000; Johnson, David E. Mueller, Karl P. & Taft, William H (2003)

<sup>16</sup> Lebow, Richard N & Stein, Janice (1990); "Deterrence: The Elusive Dependent Variable" (World Politics) 42, (3)

<sup>17</sup> Schelling, Thomas C. (1966); "Arms and Influence" (Yale University Press); Johnson, David E. Mueller, Karl P. & Taft, William H (2003)

<sup>18</sup> Danlovic, Vesna (2002)

<sup>19</sup> Johnson, David E. Mueller, Karl P. & Taft, William H (2003)

<sup>20</sup> Lebow, Richard N & Stein, Janice (1990)

<sup>21</sup> Slantchev, Branislav L. (2005)

<sup>22</sup> Lebow, Richard N & Stein, Janice (1990); Slantchev, Branislav L. (2005);

comprising a majority of deterrence situations between 1816 and 1984, deterrence thinking has followed a similar path through a literary focus on extended deterrence.<sup>23</sup>

**General:** refers to situations where there is no particular danger of potential attack yet an adversarial relationship or underlying antagonism persists.<sup>24</sup>

**Immediate:** refers to situations "where at least one side is seriously considering an attack while the other is mounting a threat of retaliation in order to prevent it."<sup>25</sup>

**Indirect/Direct:** can refer to the target of a coercive policy: whether designed to impact upon the behaviour of a decision-maker directly, or indirectly through the individuals surrounding the decision-maker and the populace beyond.<sup>26</sup>

**Pivotal:** How can [a third party] deter [two adversaries] from going to war and impel them to accept compromise without firmly choosing sides? This age-old strategic dilemma, which Timothy W. Crawford calls "pivotal deterrence," has become a central challenge of international security in today's unipolar world.<sup>27</sup>

**Rational:** In this regard, rationality does not carry any connotations of normative behaviour. That is, behaving rationally does not necessarily mean that one behaves morally or ethically. All that is required is that for an actor to behave rationally, his choice of action should be designed to achieve outcomes consistent with his goals.<sup>28</sup> The theory is founded upon the assumption of an opponent's decision-making calculus as 'rational' i.e. based on the information available, the opponent will order the available options and chooses an option with the greatest expected utility.<sup>29</sup> Based on this premise, rational deterrence theory stipulates that a retaliatory threat will succeed in preventing a challenge if: the leaders of the deterring state clearly define the behaviour deemed to be unacceptable, they clearly communicate a credible threat of punishment, and demonstrate a resolve to carry out the retaliation if the challenger fails to comply.<sup>30</sup>

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<sup>23</sup> Danilovic, Vesna (2002); Lebow 1990

<sup>24</sup> Slantchev, Branislav L. (2005); p.30 Huth & Russett 1988

<sup>25</sup> Morgan, 1983: chapter 1 in p.30 Huth & Russett 1988; Slantchev, Branislav L. (2005)

<sup>26</sup> Codner 2009

<sup>27</sup> Crawford, Timothy W. (2003); "Pivotal Deterrence: Third-Party Statecraft and the Pursuit of Peace" (Cornell University Press)

<sup>28</sup> Slantchev, Branislav L. (2005)

<sup>29</sup> Huth, Paul & Russett, Bruce (1984); "What Makes Deterrence Work? Cases from 1900 to 1980" (World Politics) 36, (4)

<sup>30</sup> Harvey, Frank P. (1999); "Practicing Coercion: Revisiting Successes and Failures using Boolean Logic and Comparative Methods"(Journal of Conflict Resolution)



## Theories Underpinning Decision-Making

The crux of coercion theory is the idea of influencing the actions of an individual or a group. The way that a person or a group makes a decision is therefore of fundamental importance to discussions concerning coercion. This section is intended to outline the major theories that describe decision making as it relates to coercion. It is not comprehensive review of decision making theory, since numerous models exist for decision making in different situations. However, to satisfy the requirements of this document, it is most likely sufficient to limit the text to the core theory of the rational actor model and some major theories that modify the ideas outlined in it.

### Rational Actor Model Theory

Rational Actor Model theory is found commonly at the heart of contemporary foreign policy development and analysis and tends to provide a core component for coercive policy creation.<sup>31</sup> This social science theory assumes firstly that all actors are rational, secondly that they rank their preferences, and thirdly they seek to achieve those preferences. Perfect rationality is not presumed; there is an implicit understanding that information will be incomplete and that sub-optimal decisions can result; however all decision-makers are said to remain rational in their calculus and therefore choose the option with the greatest expected utility.<sup>32</sup> The greater the level of rationality, the more predictable the behaviour, but this may not necessarily make coercion less problematic.<sup>33</sup> In application of the theory for the analysis of an action undertaken one state towards another, the model assumes actions are intended, strategic, and value maximizing. An explanation of an action therefore “consists of showing what goal the government was pursuing when it acted and how the action was a reasonable choice, given the nation’s objective.”<sup>34</sup>

The rational actor model theory presumes that decision-makers are rational, risk-prone gain-maximisers who are free of domestic constraints and able correctly to identify themselves as defenders or challengers.<sup>35</sup> However, the psychological and case study approaches strongly contest what they consider as unrealistic assumptions of rationality in decision making.<sup>36</sup> Empirical analyses of deterrence failures find that the assumptions made by the rational actor model do not necessarily fit reality; as rather than opponents taking risks to maximise perceived gains, many opponents take risks to minimise perceived losses and some even disregard gain-maximising utility calculations altogether.<sup>37</sup> Factors outside of rational-utilitarian calculations can be crucial in predicting an opponent’s behaviour<sup>38</sup> especially when considering the observation that decision-makers are frequently unaware of how external factors have an impact on their behaviour.<sup>39</sup> Lebow laments,

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<sup>31</sup> Allison, Graham & Zelikow, Philip (1999) “Essence of Decision: Explaining the Cuban Missile Crisis” 2nd (Longman)

<sup>32</sup> Johnson, David E. Mueller, Karl P. & Taft, William H (2003)

<sup>33</sup> *ibid*

<sup>34</sup> Allison, Graham & Zelikow, Philip (1999)

<sup>35</sup> Lebow, Richard N & Stein, Janice (1989); “Rational Deterrence Theory: I Think Therefore I Deter” (World Politics) 41, (2)

<sup>36</sup> Jervis 1979; Alexander L. George & Richard Smoke (1974); Lebow 1989; Sperandei, Maria (2006)

<sup>37</sup> Lebow, Richard N & Stein, Janice (1989)

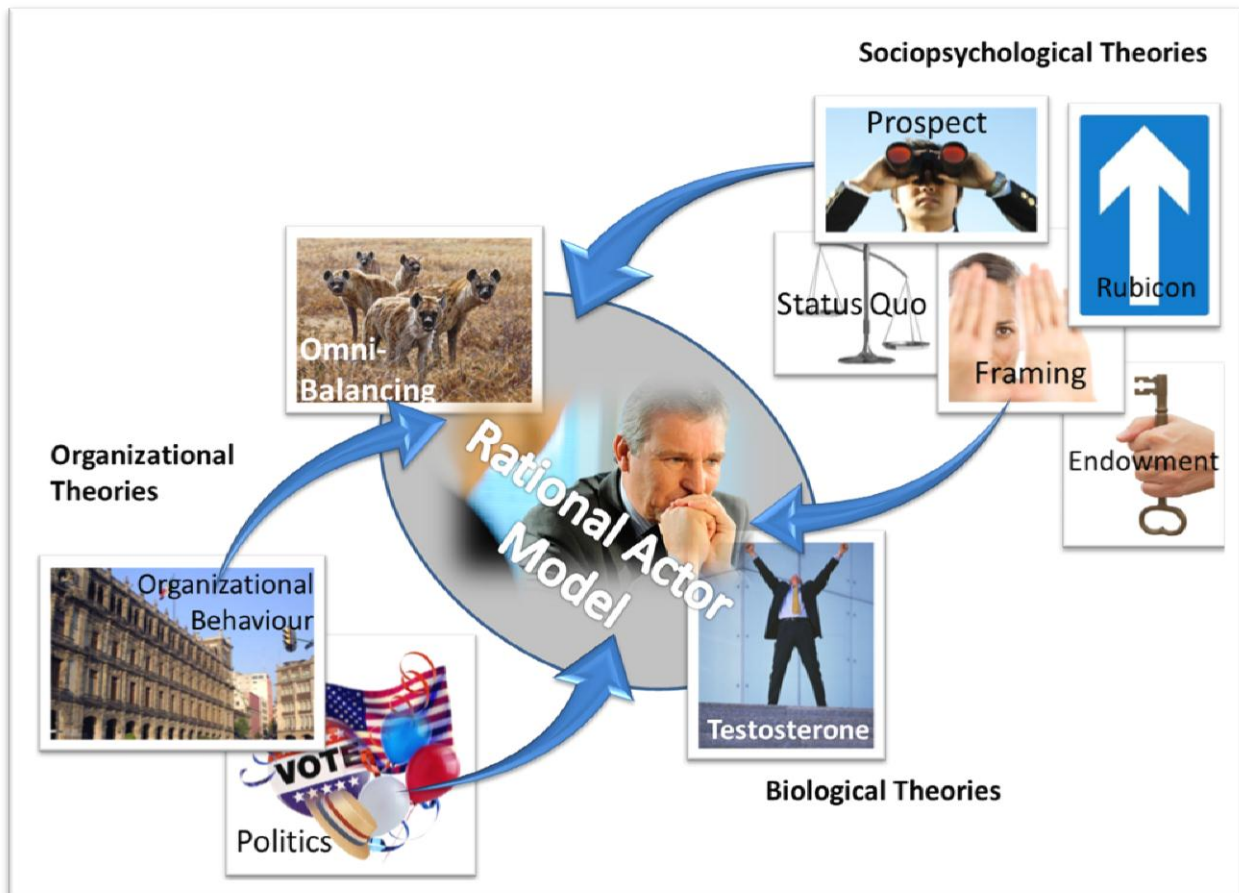
<sup>38</sup> Sperandei, Maria (2006); Lebow, Richard N & Stein, Janice (1989)

<sup>39</sup> Jervis, Robert (1982)

“rational deterrence theories are theories about non-existent decision makers operating in non-existent environments.”<sup>40</sup>

### Modifying the Rational Actor Model

The utility of the rational actor model is widely acknowledged due to its relative simplicity and logical appeal. However, this foundational theory for decision-making has been challenged by the case study and social-psychology approaches through observations that deviations from the model are commonplace. Therefore, the exploration of some key modifying theories is deemed necessary to develop a more comprehensive understanding of an adversary’s decision-making process.



**Endowment Effect:** In behavioural economics, the endowment effect is a hypothesis that people value a good or service more once their right of ownership to it has been established. The hypothesis is considered inconsistent with standard economic theory, which would assert that a person's willingness to pay for something should be equal to their willingness to accept compensation to be deprived of it. For coercion considerations the endowment effect implies a bias in an individual's assessment of the value of things that they own, or that they perceive that they own, than objects that they do not.

**Governmental Politics Model:** This model argues that foreign policy actions are a result of the politics, bargaining, idea-sharing and power-playing within in the national government structure. The model considers policy actions as resultants of a process where many players bring their personal desires,

<sup>40</sup> Lebow, Richard N & Stein, Janice (1989)

opinions, and viewpoints together and often settle upon a course of action that is very different from one they would have chosen individually. Therefore, “to explain why a particular formal governmental decision was made...it is necessary to identify the games and players, to display the coalitions, bargains and compromises, and to convey some feel for the confusion”.<sup>41</sup>

**Leadership and Testosterone:** Adding a biological component to the debate, Rosen identifies that the levels of testosterone in decision makers should be an important consideration when predicting behaviour. Whilst there are variations in base levels of testosterone across all individuals, in general higher levels of testosterone are found among high-status individual males. Some evidence that high-testosterone individuals in unstable social hierarchies tend to act in ways that elevate their testosterone levels – i.e. members of high-testosterone groups that have not established a stable status hierarchy are more likely to engage in dominant behaviour. Successful dominant behaviour results in increases in individual testosterone levels, which is associated with a positive shift in the subjective state of mind, and there is an internal, subjective payoff associated with successful dominant behaviour, which is independent of external rewards or costs. The payoff associated with successful dominant behaviour may lead to excessive dominant behaviour.

Ultimately, if such individuals live in an unstable status hierarchy, such as those that found in discussions between states, they will have a predisposition to engage in dominant behaviour and will be engaged in self-reinforcing and self-rewarding cycles of social competition, beyond the point that would be justified by external rewards, and until such time as they meet with defeat. Rosen concludes that of selection mechanisms operate to create state elites that are composed of high-testosterone individuals, if there are no internal institutional checks, and if the international environment is permissive, these people will tend to engage in the international pursuit of dominance in ways that would not be predicted by the rational actor model theory, which that assumes that decisions on war concern objective purely cost-benefit analyses.

“In plain language, some people, under specified conditions, are more likely to fight when challenged. [These individuals will...] get satisfaction from subduing challengers... they will emerge from one victory in status competition even more likely to engage in another competition, rather than remain content with what they have gained.”<sup>42</sup>

**Omni-balancing:** The theory centres on the argument that decisions must be considered in the context of external and internal balances of power, “including domestic threats which are often more important than external ones.”<sup>43</sup> A change in behaviour or choice can be frequently interpreted as a response to the leadership of a state’s personal security needs. For coercion, omni-balancing would result in a non-rational evaluation of personal security needs in comparison to other factors. Put another way, someone practicing coercion would very likely underestimate the value of personal security within the opponent’s decision making calculus.

**Organisational Behaviour Model:** The model disputes state activities as rational choices decided upon by a unitary decision-maker. The theory identifies foreign policy actions as outputs of the many large organizations which, when combined, constitute a government, with each working according to their

<sup>41</sup> Allison, Graham & Zelikow, Philip (1999)

<sup>42</sup> Rosen, Stephen P. (2007); “War and Human Nature” (Princeton University Press)

<sup>43</sup> David, Steven R. (1991); “Choosing Sides: Alignment and Realignment in the Third World” (John Hopkins University Press)

standard patterns of behaviour.<sup>44</sup> The model infers that options open to the government are limited by current organizational capacities and abilities and in turn, that organizational actions are limited and informed by their standard operating procedures, culture and the scenarios they have previously dealt with.

The model implies the existence of organisational momentum behind a decision which may increase the requirements of an effective coercive strategy in order to induce a change in direction from those organisations, as opposed to the requirements for coercing an individual decision-maker. Moreover, the complexity of a decision derived from multiple organisations can offer an obscure decision-making process; with a subsequent impact upon the identification of the correct targets, threats and incentives for an effective coercive strategy.

**Prospect Theory & Framing:** Prospect theory describes how individuals who face a decision and have a definite preference can reach an alternative preference due solely to the framing of the problem.<sup>45</sup> Framing means that identical problems will result in different choices if presented differently (e.g. a preference for surgery with a 70% survival rate over surgery with a 30% chance of death). Experimentation with the prospect theory found that in general decision-makers were *risk-averse* when choices were framed in terms of gains, whilst they tended to be *risk-taking* when those same choices were framed in terms of losses.<sup>46</sup> Moreover, the magnitudes of the losses involved did not need be that large in order to induce risk-seeking behaviour, particularly if the losses were perceived to be certain. Prospect theory would suggest that adversaries are likely to be more willing to take comparatively excessive risks to avoid losses and generally take fewer risks to achieve gains. This helps to explain why it is generally considered to be easier to deter an adversary from initiating an action they have not yet taken, than to compel them to change what they have already done.<sup>47</sup>

Another implication of prospect theory is that people have a tendency to remain at the *status quo*. The *status quo* is potentially the most common reference point for decision-makers in the framing of a problem yet actors may not share a common understanding of it. Whilst differing perspectives are a primary cause of this disparity, it is also important to understand that the *status quo* is a predominantly intentional construct. For example; the map of the world is no accident, since states "...have generally achieved dominant influence in the areas that are most important to them."<sup>48</sup> Overall, prospect theory would predict that a state that perceives itself to be in a deteriorating situation is more willing to take excessively risky actions to maintain the *status quo*, when rational choice would lead to a preference for restraint.

**Rubicon Theory:** Rubicon theory endeavours to explain an observed shift in the decision-making process before and after a decision has been made; proposing that once an opponent's decision has been made changing that decision will be difficult. Psychological experiments observed that prior to a decision being made, subjects tended to exist in a deliberative state, with rational calculi playing a

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<sup>44</sup> Allison, Graham & Zelikow, Philip (1999)

<sup>45</sup> Tversky, Amos & Kahneman, Daniel (1979); "Prospect Theory: An Analysis of Decision Under Risk" (Econometrica) 47, (2); Tversky, Amos & Kahneman, Daniel (1981); "The Framing of Decisions and the Psychology of Choice" (Science) 211, (4181)

<sup>46</sup> *ibid*

<sup>47</sup> Schelling, Thomas C. (1966); Jervis, Robert (1989); "Rational Deterrence: Theory and Evidence" (World Politics) 41, (2)

<sup>48</sup> Jervis, Robert (1989)

significant part in their decision-making process. However, once a decision had been made, decision-makers tended to exhibit implementation-focused behavior that included close-mindedness, self-serving evaluation, delusional control and confidence in their decision and even the tendency to disregard critical information that contests their decision.<sup>49</sup>

Rubicon theory illustrates the importance of coercing an opponent whilst in the early phases of a decision-making cycle and it reinforces the commonly held notion that compelling an actor to change their action may be more difficult to achieve than deterring one from acting in the first place. The theory also alludes to a greater probability of success for the clear and credible communication of proportionate and accurate threats and incentives, as opposed to intended ambiguity, but suggests that even overt coercive messages may be discounted if an opponent has already reached a decision.

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<sup>49</sup> Johnson Dominic D.P & Tierney, Dominic (2011); "The Rubicon Theory of War: How the Path to Conflict Reaches the Point of No Return" (International Security) 36, (1)